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ABSTRACT

Three different projects, undertaken during 1968-1975 and focusing on problems connected with reforms in Swedish higher education and particularly in the Faculties of Arts and Sciences, are reported. The first project was part of the research program initiated by the University Admittance Requirements Committee to serve as a basis for suggestions concerning college admission. It considered the relationship between results at the university and previous school achievement and test results for about 1,000 students during their first year of study. A second project focused on the problem of internal efficiency in the Faculties of Arts and Sciences. Two different populations at the University of Umea were kept under continual observation with regard to examination results, the amount of time devoted to study, dropouts and delays in studies. In the third study the relevance of educational programs and students' educational careers was investigated. Implications of all three of these projects are discussed. Both the analysis of the literature and the empirical analyses have shown the need for developing methods for registering, describing, and treating qualitative factors of an educational program. (LBH)

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COMPLETED PROJECT

PROJECT TITLE: The way through university.
A review of research and an empirical analysis of some lines of study within the Faculty of Arts and Sciences at the University of Umeå, 1968 - 1975

WAS CARRIED OUT AT: Department of Education, University of Umeå, S-901 87 Umeå. Phone: 090/ 125600

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HE009382

## I. POINTS OF DEPARTURE - FRAMES OF REFERENCE

### BACKGROUND - AIM

During the period 1968-1975 the author had the opportunity of participating in three different projects, all of which were focused on problems connected with reforms in Swedish higher education, particularly in the Faculties of Arts and Sciences. All the projects gathered their empirical data from student groups at the newly established University of Umeå.

The first project (1968-1969) was part of the research programme which the University Admittance Requirements Committee initiated, to serve as a basis for suggestions concerning admittance to higher education. It was concerned with the relationship between results at the university and previous school achievements and test results for about 1000 students during their first year of study. The other project (Analysis of Education and Students, 1969-1973) was focused on the problem of internal efficiency in the Faculties of Arts



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and Sciences and was intimately connected with a new Education Act of 1969. In this project two different populations at the University of Umeå were kept under continual observation with regard to examination results, the amount of time devoted to study, drop-out and delays in studies. One population, partly the same as in Project 1, was observed for four years, the other for one year (Elgqvist-Saltzman 1974). A third project (Ways In, Through and Out of an Educational System, 1973-1975) was started to study the relevance of educational programmes and the students' educational careers. Originally there were also plans to describe the vocational status of students and the relationship between their education and later vocations by combining extensive data - collected from different registration files - with an intensive interview phase with some of the students. For various reasons this intensive phase has not come about and the data available in the final report - including items collected during the first projects - concern final educational status six years after registration at the University for 599 students studying English, Pedagogics, Statistics or Chemistry at the University of Umeå in the autumn term of 1968.

The data about the population are combined with a detailed description of environmental factors in the educational situation, in order to provide a better understanding of the flow through the educational system and the students' attainment of a final educational status. The overriding aim of all three projects has been to provide a firmer basis for the evaluation of the educational programmes at the Faculty of Arts and Sciences.

## FRAMES OF REFERENCE

During the investigation period there have been great changes in the institutions of higher education but also changes in the way of looking at higher education and its role in society, and there has been a growing interest in research and the evaluation of higher education.

In Sweden, as well as in the other Nordic countries, the period after World War II has been a period of rationalization. The Faculties of Arts and Sciences in particular were exposed to rather radical reforms during the sixties. The reforms were closely connected with the exceptionally rapid student explosion in higher education. The growth-rate in Sweden was one of the biggest in Europe. One main aim behind the reforms was to increase internal efficiency, decrease wastage and to cut down on the time taken by students to complete their studies. There was also a growing concern about the students' vocational training and the institutions of learning started to establish firmer connections with representatives of the labour market.

The reform work was met by a student reaction at the end of the sixties with demands for more discussions about the overriding goals of higher education. One of the burning issues was the question of whose goals education should serve. The Swedish student revolt - like the revolts in other parts of Europe - was inspired by critical and radical educational research in Germany and France. Student bodies became politically aware and there was a lot of discussion about educational democracy. Many students were critical of previous student participation in the planning of course programmes, and projects were initiated to find new forms for co-operation and participation in the organisation of the universities.

The explosion in student numbers increased interest in higher education as a research field. Economists realized the importance of education for the gross national income, sociologists studied social mobility and the socializing effect of education, and educational psychologists - particularly in the USA - investigated whether or not values and attitudes were changed by attending courses at institutions of further education.

In Sweden there was very little research into higher education up to the end of the sixties. During the early seventies Research and Development Centres were set up at the Universities and at the Central Office of the Chancellor of the universities, through which a firmer basis for research work was implemented. Nordic conferences about research into higher education in 1968, 1969 and 1974 gave researchers the opportunity to meet and develop their ideas.

Between 1969 and 1974 a significant change in the direction of research could be seen. Instead of focusing on results and drop-out as individual achievements or failures, there was a growing concern for looking at educational programmes in a societal context. Disappointment with earlier research results led to a demand for a better theoretical basis for research. At the same time demand for and interest in metatheoretical questions and for an evaluation of educational processes in a societal context were growing. There was a trend away from experimental research strategies towards wider techniques of handling and examining data - a movement from Educational Psychology towards the approach of the Humanities.

## THREE PROJECTS IN A PERSPECTIVE OF DEVELOPMENT

Since data used in the final empirical analyses are dependent on decisions and research strategies in earlier phases of the project the author considered it important to describe the earlier projects together with their aims and results in relation to the trends in planning and research in higher education.

In the forecast study of 1968-1969 - when we attempted to work out the relationship between results, on the one hand, and grades and tests, on the other, for a group of students whose plans for study and whose capabilities were as homogeneous as possible - we had to leave out marginal groups which now seem very interesting from the point of view of educational planning. Even if our assessments of the relationship between study results and grades/tests indicated a more intimate connection than similar Swedish investigations it was still less than in most American forecast studies and studies in Sweden concerning secondary education. It seemed that success in the first year at the Faculty of Arts and Sciences was more dependent on other factors besides achievements in secondary school and intelligence test scores. Student goals and motives in choosing different subjects thus seemed to be very important and were not taken into account sufficiently. It seemed to be more informative to analyse drop-out and delays in different groups than to generalize about success in relation to earlier grades and test results.

As regards the second project - the study of the effectiveness of educational programmes - analyses showed that a great deal of the wastage, which had been given so much attention during the reforms, could be described as mobility within the whole educational system. The pass-rate seemed to be quite satisfactory and in accordance with a norm which had been determined by Parliament. The underestimation of the pass-rate in the official statistics was due to difficulties in identifying the target-group as it had been defined by Parliament. The importance of being aware of the pitfalls when interpreting official statistics about internal efficiency was underlined. The project found that drop-out and pass-rate could not be looked upon as good measures of efficiency (Elgqvist-Saltzman 1974). The importance of studying the drop-outs in relation to student goals and to the educational process was stressed. The value of an estimation of general drop-out numbers was questioned since there were various patterns in different subjects and in various student groups.

The first two projects have already been described in different reports (cf. reference list). The results of the third project are described in the final report. There have been some difficulties in carrying out the third project in accordance with the original intentions. The author found it more difficult to convince the granting authorities about the urgency of the project when effectivity questions were not stressed and when it was doubtful whether generalizations could be made. Also it was more difficult and time-consuming to describe the flow of students by combining different registration files than could have been foreseen.

## II. THEORETICAL BACKGROUND AND METHODOLOGICAL DESIGN

The change in behaviorial science from a paradigm of criterion effectiveness towards a process paradigm (Gage 1963) can be seen even in the literature about educational and vocational choices, changes and effects. An analysis of earlier research has been summed up in the following way:

The research has been very much concerned with social mobility and with socialisation as an effect of education. Many researchers have confessed that it is more difficult to implement the democratic concept of equality than might be thought. There are still inequalities in the educational system in higher education in Sweden based on sex and social origin. Students from different backgrounds seem to prefer different lines of study. There seems to be a growing demand for more attention to be paid to the formation of attitudes, to individual goals and objectives and also to the content of educational programmes. Up to now social and economic variables have been stressed in research about educational effects. A growing need for more attention to pedagogical variables can be identified. Criticism has been levelled against research strategies which only pay attention to quantitative variables and easily measurable data but which neglect to take into account more complicated qualitative factors. A noticeable trend has been the growing interest in the context of the educational programme. The tendency has been for data to be looked upon in their cultural, social, economic and political context. Researchers have asked for more careful scrutiny and syntheses in-depth of existing findings (Spady 1973). More advanced mathematical models have been worked out and at the same time warnings have been given about using closed additive models in situations for which they are not relevant.

For the empirical analyses Dahllöf's (1967, 1970 a and b, 1971, 1973 a and b, 1974) interpretation of the process paradigm on a macro level has been the theoretical starting-point. Dahllöf lays emphasis on the need for a more thorough understanding of the mechanisms behind reported results in his evaluation strategies (Dahllöf 1969, 1970 c, 1973 a, 1976 a and b). The theoretical models, which stress the interplay between the organizational frames in the educational system and the educational processes, have been very useful. The concept, frame factor, according to the general definition that Dahllöf has given to it, has been a very important and informative variable in the empirical analyses. In this particular context a frame factor means an environmental factor, which can be manipulated by the educational system but which is action-inhibiting for the individual until the next change in the system is made. Frame factors vary be-

tween different educational problems and levels. In this study of the processes by means of which individuals strive for final educational status, the author found the following to be important: Available educational programmes, proximity of educational institution in terms of distance or time, the competitive situation due to admittance restrictions for various lines of study, student counselling and the student grant system. As regards methodology a path analysis was discussed, but was not found appropriate in this particular study.

## III. EMPIRICAL ANALYSES

### Frame and other environmental factors

Student numbers reached their highest point in Umeå during the year that the investigated population started their studies. It was particularly difficult to gain admittance to restricted lines of study in higher education during the period 1968-1969. Competition was unusually fierce. This fact was very important when trying to understand motives for beginning to study at the unrestricted Faculty of Arts and Sciences and for changing to other lines later.

A description of the choice of courses in Umeå at that time showed that besides the University there were several institutions in Umeå offering teacher training, pre-school training and nursing - all lines which usually attract women more than men. The question was posed of whether or not that could be one reason why so many women drop out from the Faculty of Arts in order to change to other courses.

The labour market situation grew worse for graduates during the investigated period. It is worth noting that the labour market authorities initiated special labour market courses for unemployed graduates and found emergency employment for them in some cases during this period. The economic situation for university graduates also changed owing to the levelling out of wages between graduates and other groups. On the whole many important changes had taken place in the education and labour market sectors, not least in the North during the period of the study. Changes in educational and vocational plans might therefore be very understandable reactions to changes in students' initial positions before becoming involved in the search for academic status. Frame and other environmental factors must be taken into account as explanatory or risk factors when attempting to understand the students' choice of educational programme and the varying patterns of movement through the educational system.

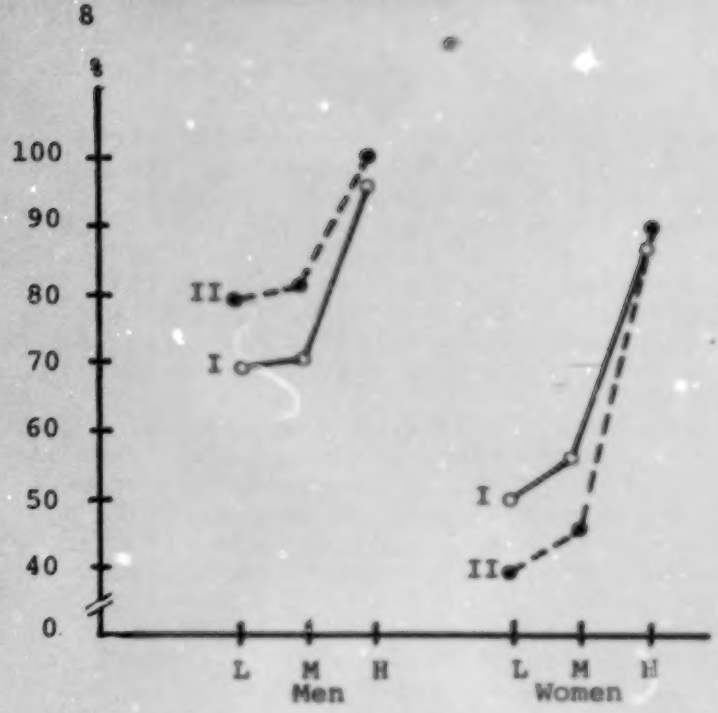
## THE POPULATION - BACKGROUND AND GOALS

A skew distribution between men and women in lines of study was observed. Programmes starting with English or Pedagogics had more women but in Statistics men dominated. The students´ earlier educational backgrounds differred between different lines. Students studying Economics had higher grades because that line had a restricted intake. The students´ geographical backgrounds were described in terms of the size of their home town and its distance from the University.

Umeå has more students coming from lower social groups than traditional universities. The educational status of the father and mother was investigated and showed a big generation gap with regard to education. For about 70 % of the whole population parents did not have more than an elementary school education (7 years). This study tried to use an educational instead of a socio-economic measure as regards the family backgrounds. Since the author considered it important for an educational researcher to focus attention on educational aspects even if the methods are not as precise and the measurements not particularly exact. A measure of educational tradition in the family distinguishes between first generation students (I) and the rest (II). First generation students means students whose parents have not had more than 7 years of elementary school education. (There is one exception: When the father is in Group I on the socio-economic scale the student is not termed a first generation student even if the father has not had more than 7 years of elementary school education).

To sum up, most of the students in the population were young students from the northern part of Sweden, coming directly from secondary school. They were usually the first member of the family to become a student in higher education; many were also the first from their home village to become students in higher education.

As regards the individual´s educational and vocational plans, motives for studying and the firmness of their educational plans a comparison was made between first generation students and others in relation to sex and grades in school (using their average mark in the school-leaving examination). Generally was found that boys were more sure about what they were going to do, as well as those who were not first generation students. Between students with a high grade level the difference was much smaller than in other groups. When looking at different vocational plans we found that all the women in our population preferred teacher training. Men with an educational tradition in the family preferred economic vocations but first generation men also preferred teacher training.




L = Low average grade from secondary school

M = Medium -"-

H = High -"-

Fig. 1 The portion firstgenerationstudents (I) and others (II) on different gradelevels who at the beginning of their studies had intention to graduate.

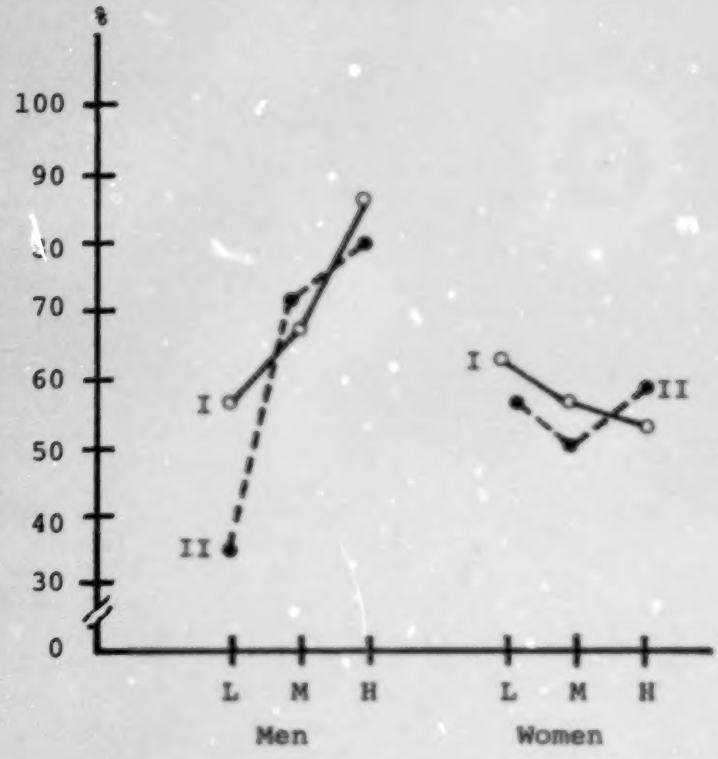



Fig. 2 The portion firstgenerationstudents (I) and others (II) on different gradelevels who had mainly vocational reasons for choosing their lines of study.

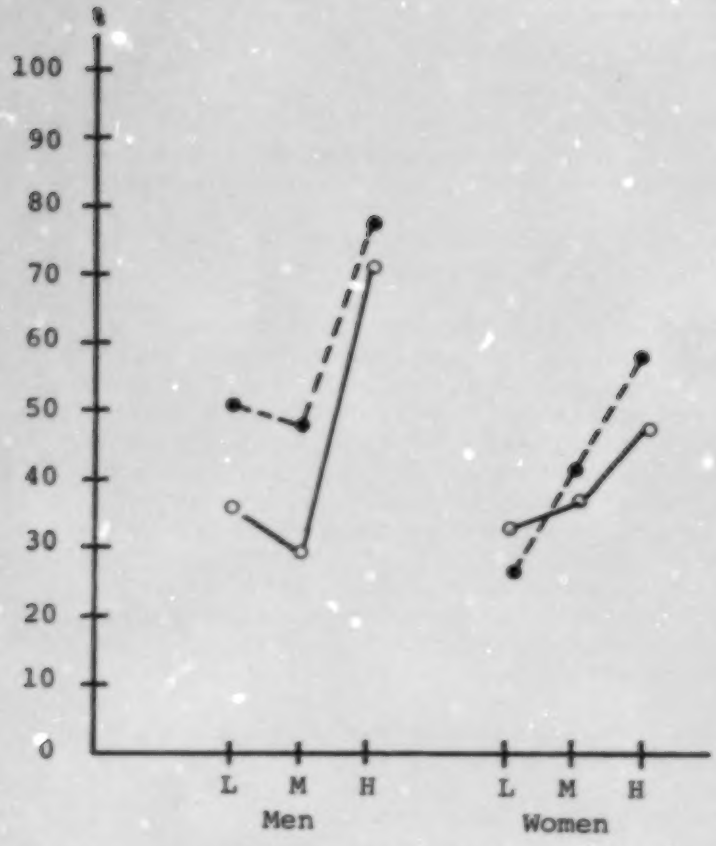



Fig. 3 The portion firstgenerationstudents (I) and (II) others on different gradelevels who at the beginning of their studies were sure about their vocational choices.

## INDIVIDUAL GOALS IN RELATION TO OVERRIDING SOCIETAL EDUCATIONAL GOALS

The backgrounds, goals and motives of the students were compared and discussed in one chapter in relation to the overriding societal goals such as

1. Equality.
2. Vocational training:
   (Better adaptation to the labour market, including a greater readiness to take into account the opinions of various representatives of industry etc, together with greater care in the planning of the individual's transition from his educational institute to the labour market.)
3. Increased internal efficiency.

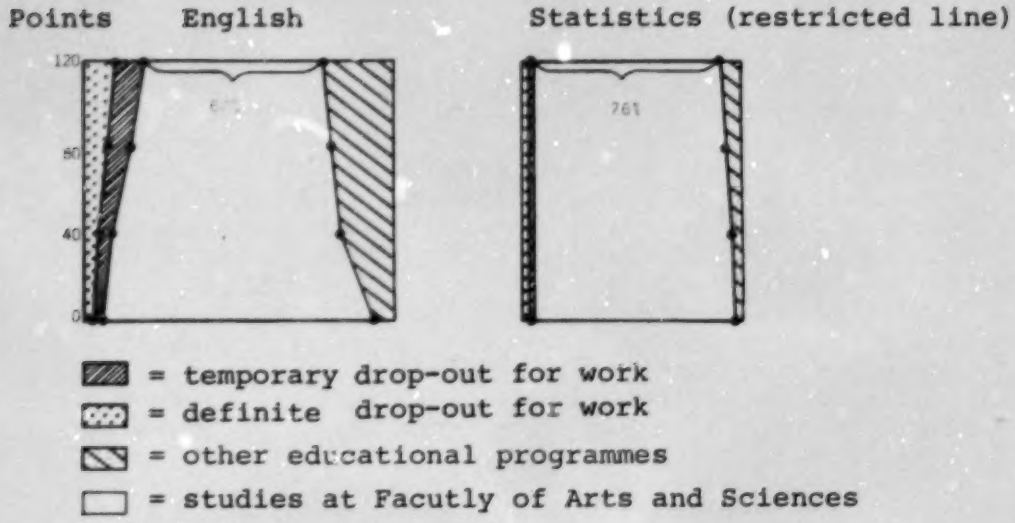
As regards the goal of equality the high percentage of first generation students from the northern part of Sweden could be an indication of the fact that social and regional goals with regard to enrollment were realised at Umeå University. Students with no educational tradition in the family but who had good grades, were very similar with regard to choice of programme and pattern of study to those who had a family tradition of education. First generation students with low grades were more unsure than others and seemed to require more counselling. Differences between the sexes were not less in Umeå than in the traditional universities.

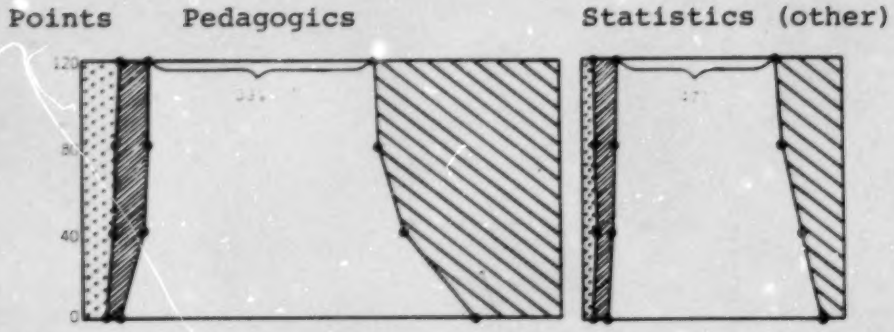
Less than half the population had special vocational plans at the beginning of their studies. 1/3 of the group which read Pedagogics first, had chosen the subject while waiting for something else.

The goal of efficiency has been the object of much interest in Sweden in connection with the reforms of the Faculties of Arts and Sciences. Our data indicated that this student group did not feel that the goal of passing in the stipulated time was a particularly urgent one. No one complained about long drawn-out study periods, rather that they were all too quickly shuffled through the education machine into an uncertain labour market.

## CHANGES OF POSITION DURING THE INVESTIGATED PERIOD

The flow of students from different subjects had two directions towards other educational programmes and towards the labour market. The patterns were different in the different subjects and were discussed in relation to environmental factors which were experienced in different ways in the different groups.




The students flow to other educational programmes and other forms of drop-out from different subjects in relation to points received in Faculties of Arts and Sciences.

There seemed to be great mobility within the educational system but geographical mobility was very slight.

Unfortunately the Project had not much opportunity to study process variables. A questionnaire at the end of the sixth term of study was used to ask some questions about how satisfied the students were at that time with the education they received and with the results of their studies. About 1/3 of the group would choose the same courses if they had the opportunity to choose today. First generation students with good grades were most contented with their own results. As regards counselling it was astonishing that so few first generation students with low grades had visited the counsellors.

Changes in vocational plans and study plans for groups with different motives for study were shown. Most changes seemed to occur because of external factors, changes in admittance procedures and in the labour market. Very few mentioned "internal factors". That could be due to the research strategy (which so far has not given much attention to problems of measuring and assessing internal factors such as general contentment). It could, however, also be due to the fact that the external factors - the frame factors - were extremely strong during this period.

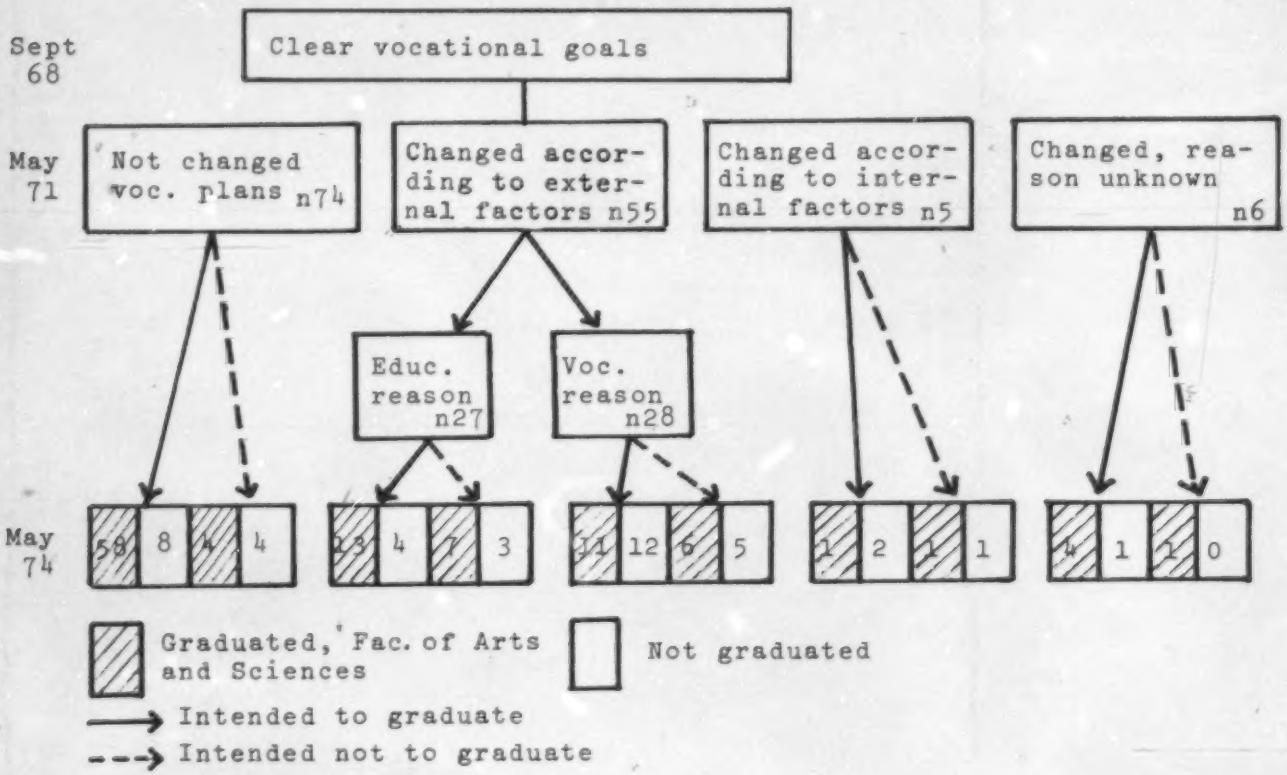



Fig. 5 Reasons for changes in vocational and educational plans for 140 students, who at the beginning of their studies had a clear vocational goal.

## STUDY RESULTS AFTER 6 YEARS

The students total educational status after six years follow-up were described with different criteria. In some analyses a detailed description of various educational levels were used. Mainly a distinction was made between more "qualified" educational programmes [1] and other programmes and we distinguished between students who had finished their study programmes, students who were still studying and drop-outs.

When comparing sexes in relation to study results we found that the difference between men and women was not generally a question of the length of study but more a question of different types of educational programme. We found many drop-outs among first generation male students from the northern part of Sweden. These students belonged mainly to a low grade group. Students with high grades from secondary school seemed to stay longer in the educational system than students with low grades. First generation female students seemed to be generally more successful than students with an educational tradition in the family. The contrary was found to be the case among male students. (compare table 1 and 2).

Tab. 1 Educational status after 6 years for women in relation to educational tradition in family and to average grade from secondary school.

| Av.grade | Ed. trad. | FINISHED A & S | FINISHED O | STILL STUD. Qual | STILL STUD. O | DROP-OUT Late | DROP-OUT Early | TOTAL % | TOTAL N |
|---|---|---|---|---|---|---|---|---|---|
| High | I | 50 | 9 | 27 | 4 | - | 10 | 100 | 22 |
| | II | 38 | 5 | 36 | 16 | - | 5 | 100 | 19 |
| Medium | I | 38 | 27 | 15 | 5 | 3 | 12 | 100 | 102 |
| | II | 30 | 32 | 11 | 4 | 6 | 17 | 100 | 45 |
| Low | I | 44 | 20 | 10 | - | 5 | 21 | 100 | 43 |
| | II | 34 | 19 | 5 | 5 | 14 | 23 | 100 | 22 |

Tab. 2 Educational status after 6 years for men in relation to educational tradition in family and to average grade from secondary school.

| Av.grade | Ed. trad. | FINISHED A & S | FINISHED O | STILL STUD. Qual | STILL STUD. O | DROP-OUT Late | DROP-OUT Early | TOTAL % | TOTAL N |
|---|---|---|---|---|---|---|---|---|---|
| High | | 52 | 4 | 29 | 7 | 4 | 4 | 100 | 123 |
| Medium | | 35 | 15 | 13 | 7 | 4 | 16 | 100 | 335 |
| Low | | 45 | 10 | 7 | 3 | 12 | 23 | 100 | 123 |

Students who had finished their studies or were still studying in qualified education could be called "formally successful".

A & S = faculty of Arts and Sciences
O = others

1) doctoral studies, different forms of restricted studies

Tab. 3 Proportion "formally successful" men and women in relation to educational tradition and average grade. (I = first generation student)

| Av.grade | Ed.trad | Men | | Women | | Total | |
|---|---|---|---|---|---|---|---|
| High | I | 88 | | 90 | | 89 | |
| | II | 86 | | 95 | | 90 | |
| | | | 87 | | 92 | | 89 |
| Medium | I | 72 | | 80 | | 76 | |
| | II | 62 | | 73 | | 67 | |
| | | | 69 | | 77 | | 73 |
| Low | I | 49 | | 74 | | 61 | |
| | II | 63 | | 58 | | 60 | |
| | | | 52 | | 70 | | 61 |

For a better understanding of the results it was necessary to look at different combinations of subjects. Half of the first generation female students with high average grades had taken Arts degrees. Economics combinations attracted considerably more men, more students with a tradition of education in their families and more with high grades. Behavioural Science combinations accounted for as much as one third of first generation male students with low grades. A remarkably large number of women with high grades and a tradition of education in their homes had zero results or only a few odd courses completed.

Tab. 4 The percentage "formally successful" in relation to grades, firmness of plans and educational plans.

| Educ. plans | Sex | GRADE Low | | | Med | | | High | | | Number |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FIRMNESS | | | | | | | | | |
| | | L | M | H | L | M | H | L | M | H | |
| Grad. plans | Men | . | 67 | . | 67 | 77 | 80 | . | 87 | 86 | 165 |
| | Women | 58 | 75 | . | 89 | 80 | 80 | . | 100 | 92 | 145 |
| No grad. plans | Men | . | . | - | 42 | 54 | . | - | . | . | 38 |
| | Women | 82 | 47 | - | 64 | 80 | . | . | . | . | 113 |
| | Total | | | | | | | | | | 431 |

There were good reasons to look at motives, study goals and vocational plans. Table 4 shows the percentual differences between men and women with and without post-graduation plans in relation to grades in secondary school and to measurements of firmness of educational and vocational plans. After 6 years 86 % of the men and 92 % of the women who, when they started their studies, had post-graduation plans, high grades from secondary school and were certain about their future careers,

had obtained some post-secondary school degree or certificate or were registered as studying in higher education.

Women generally achieved better results than men. This is connected with the fact that men more often go out into professional life early, whereas women, who have a greater choice of attractive educational alternatives besides the Arts faculties, more often change their educational programme. Amongst those who had low grades the lowest value is 47 %, the highest 82 %, which showed that there are good chances of being successful in higher education even with moderate starting grades. Even if it can be said that the Table indicates that goal-fulfilment is relatively good it must be remembered that this cannot be really determined until some years after.

As a contrast to the designation "formally successful" it is possible to examine "real success in studies" and see goal-fulfilment from the point of view of the individual. Since it then becomes important to analyse further changes in goals during studies because of changes in frame conditions, changes in the environmental situation in general and changes in personal circumstances, such an evaluation requires an investigation strategy which includes interviews.

## IV. CONCLUSION

In a concluding chapter the results of the investigation are discussed in relation to previous approaches to this research field. The study - which should be seen as being concerned with methodology - have tried to come to a better understanding of the students' choice strategies which find expression in student flow through the education system by analysing the problems in a wider social and historical perspective. A lot of space has been devoted to the description of the investigation groups' frame and environmental factors. These have been very useful for explaining the selection process. The introduction into the investigation of the term, first generation student, has also provided us with some interesting patterns, which show that one should take into account the importance of the formation of attitudes in connection with the selection of courses and changes in educational programme.

Both the analysis of the literature and the empirical analyses have shown the need for developing methods for registering, describing and treating qualitative factors in and connected with the educational programme. It is particularly important to consider goal and motive variables as well as educational frame factors. The interaction between the students' goals and ambitions and society's overriding goals is also an interesting area for research. Moreover apart from studying individual goals, the historical perspective makes it important to examine which attitudes and values are passed on to the next generation.

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